

Warm and fuzzy

Killam winner brings expertise in fuzzy logic to the often far-from-fuzzy world of construction

What's in a nomination?

Successful nominators discuss what they like about the Community Connections Awards

Arts in 60 Seconds

Faculty of Arts campaign offers researchers a platform to serve up their research in a single bite

University community mourns passing of Lou Hyndman

News Staff

The University of Alberta has lost an alumnus, a chancellor emeritus and a stalwart supporter.

Louis Davies Hyndman died Nov. 24. He was 78.

Hyndman, born in Edmonton July 1, 1935, is survived by his wife Mary, daughter Jennifer and sons Bruce and Peter, all of whom are graduates of the U of A. His lifetime of achievements includes serving for four years as the university's chancellor.



Lou Hyndman served as the U of A's 15th chancellor.

"I am deeply saddened by Lou's passing," said U of A President Indira Samarasekera. "Over the decades, he was a visionary advocate for education and post-secondary education in Alberta, and helped lay the foundation for the prosperity that we enjoy today. Lou and Mary were very good friends of the university, and we will miss him dearly."

A member of the University Naval Training Division, Students' Union president and member of the Zeta Psi fraternity during his time on campus, Hyndman followed his father (who graduated from the U of A's law school in 1929) and grandfather into the practice of law until embarking on a political career that would span nearly 20 years.

Hyndman served five terms as the MLA for Edmonton West (and later Edmonton Glenora), and was named minister of education and minister of intergovernmental affairs. He was appointed house leader in 1971, a position he would hold until 1979. Hyndman served as provincial treasurer from 1979 until retiring from politics in 1986.

He returned to his law practice and served on a number of boards of directors, including Canada Trust and TransAlta Corporation. He chaired a number of provincial and federal commissions, notably the Canadian Safety and Accident

I'm gonna eat you up, oh yes I am



Four adorable canines came to the Faculty of Law building Nov. 27 to soothe the nerves of law students anxious about upcoming end-of-term papers and exams. The dogs are part of the Chimo Animal Assisted Therapy program.

Pristine baby dinosaur a once-in-a-lifetime find

Bryan Alary

Philip Currie has made some spectacular and rare fossil finds while dino hunting in Alberta's badlands, so when he says a discovery ranks among the best of his career, it's significant.

The internationally renowned University of Alberta paleontologist unearthed a remarkably preserved, near-complete skeleton of a baby *Chasmosaurus belli*. It's the first time anyone has found a baby of this species intact in 150 years of digs at Dinosaur Provincial Park—or anywhere for that matter.

That makes Currie one proud papa.

"It's pretty exciting. It's a super specimen, and I'm very lucky to be the guy that found it," said Currie, Canada Research Chair in Dinosaur Paleobiology in the Department of Biological Sciences. "There's no question this is one of the very best ones I've ever found."

The *Chasmosaurus* was a horned dinosaur once commonly found in Alberta's badlands, a relative of the *Triceratops*. Currie estimates the 1.5-metre-long fossilized baby was about three years old when it died, possibly from drowning, 72 million years ago.

He found the specimen in 2010, high up on a steep hillside after spotting a piece of skull protruding from the Earth. At first he wasn't sure if it was the horned 'frill' of a dino skull or a turtle, but a day's worth of digging confirmed the specimen's significance. It took another three years of painstaking work before it was ready to showcase to the world.

The skeleton is fully intact minus the arms, which Currie says were likely eroded away by a sinkhole several thousand years ago,



U of A paleontologist Philip Currie displays the pristine, near-complete skeleton of a baby *Chasmosaurus*, a relative of the *Triceratops*, he found in Alberta's badlands.

making it even more remarkable the rest was so well preserved.

The dino immediately becomes "one of the top three star pieces" of the U of A's Laboratory for Vertebrate Paleontology, a collection that includes more than 50,000 specimens ranging in age from 450 million to 10,000 years old. The collection is actively used by researchers and students, and there's no shortage of potential studies that can be done on the *Chasmosaurus*, Currie said, from looking at how dino skin ages to weight changes over its lifespan.

"It's an opportunity to learn something about a dinosaur that has broader implications for the whole scientific community worldwide," he said. "There's almost an infinite number of projects when you have an invaluable specimen like this." ■

Baby takes star turn in Dino 101

The public will get a chance to see a whole lot more of the baby *Chasmosaurus* Jan. 6, when a new round of classes begins for *Dino 101*, the wildly popular massive open online course led by Currie. The specimen will feature prominently in course material, providing a "sterling" example for teaching about dinosaur biology, including differences in appearance from juveniles to adults, he said.

"We'll use it as an example of how certain features like the frill in Ceratopsian dinosaurs are almost certainly developed as display structures," he added. "They are things that are not so important and much smaller in the babies, but in a large, sexually mature animal develop into these very bizarre structures."

folio

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World-leading lab opens new frontiers in diamond research

Bryan Alary

A Faculty of Science researcher will continue to open up new frontiers in diamond research in Canada's Arctic with one of the largest and best-equipped labs in the world.

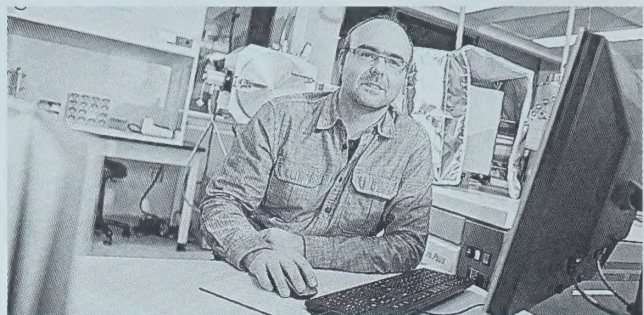
Graham Pearson, Canada Excellence Research Chair in Arctic Resources at the U of A, officially opened the Arctic Resources Geochemistry Laboratory Nov. 27. The facility will help spur the development of new methods for dating diamonds, advance understanding of diamond deposits deep underground and aid scientists and industry in determining which deposits are economically viable.

"Diamond exploration is a very time-consuming and expensive undertaking," Pearson said of the \$2-billion-a-year industry. "It's very much like looking for a needle in the haystack. If you can get rid of as much of the haystack as possible,

then it leads to much more rapid narrowing down of good deposits to focus on. That's our aim—to develop new methodologies to help narrow that search down."

The lab, part of the Canadian Centre for Isotopic Microsampling, is the largest of its kind in Canada and among the two or three best-equipped labs in the world. It includes 2,200 sq. ft. of ultra-clean work space, plus an adjacent 1,300-sq.-ft. facility that houses six mass spectrometers and laser sampling systems, used to measure ultra-trace elements in "indicator" minerals to create a fingerprint that can determine the diamond grade, or richness of a deposit. Scientists are also able to determine the age of potential deposits and host diamonds, and to identify from where in the world specific diamonds may originate, to trace illegal trade.

The work requires an ultra-clean environment to prevent trace-metal sample contamination, meaning



Graham Pearson is the Canada Excellence Research Chair in Arctic Resources.

rooms are free of metal finishes or furniture and feature fibreglass doors, walls and anti-static floors. The lab contains a sophisticated air-handling system capable of taking air that has roughly 10,000,000 particles per cubic foot and purifying it to zero.

The new laboratory was funded by a \$10 million Canada Excellence Research Chair grant to Graham Pearson, with matching funds from the University of Alberta, together with a \$1.6 million Alberta Innovates – Isomass Scientific grant.

Pearson, a professor of geochemistry, came to the U of A from Durham University in the United Kingdom, after being credited with pioneering the first technique for dating individual diamonds.

"The U of A, and in particular the Department of Earth and Atmospheric Sciences and Faculty of Science, has been an extremely supportive research environment,"

said Pearson, also noting the support of colleagues—leaders in diamond-related research who were a key factor in his coming to the U of A.

"Having a really strong nucleus of colleagues that are interested in similar problems is a great thing to have as a researcher."

An extremely complex facility to build and commission, the Arctic Resources Geochemistry Laboratory has opened in stages since last spring. In that short time it has proved an international hub of collaboration for Pearson's team and colleagues at the U of A, with interest from other places in Canada, the United States, Europe and New Zealand.

"There is considerable international collaboration and interest in this facility. Visitors from around the world are using this lab or sending samples here," Pearson said. ■

Hyndman: 1935–2013

Continued from page 1

Review Board Commission and the Premier's Commission on Future Health Care for Albertans.

He was named as Queen's Counsel in 1975 and appointed an officer of the Order of Canada in 1993.

Hyndman was installed as the 15th chancellor of the University of Alberta in June 1994. During his tenure, he strove to build the institution's reputation on a local, national and international scale. Hyndman was also instrumental in establishing the chancellor's and president's scholarships at the institution.

As he prepared to step down as chancellor in 1998, Hyndman touted his alma mater as "the single most important reason for any success I might have had."

Throughout his life, Hyndman devoted his time and energies to a number of charitable and community and public organizations. He was a director of the both the C.D. Howe Institute and the Asia Pacific Foundation. His charitable works included serving on the board of the Royal Alexandra Hospital Foundation, and with the Alberta Association of Children and Adults With Learning Disabilities and Goodwill Rehabilitation Institute of Alberta. Hyndman served as honorary captain of 4 Destroyer Squadron of the Royal Canadian Navy from 1993 to 1996; he remained a member of the Visiting Committee for the Faculty of Arts from 1994 until his passing.

Hyndman's legacy of leadership and service lives on in the Lou Hyndman Edmonton Glenora Award, valued at \$20,000 over two years. The award was established in 1986 to recognize students who have shown leadership through involvement in university or community organizations, sports activities, and cultural or political activities.

In recognition of his years of leadership as a politician and in the U of A community, Hyndman received an honorary doctor of laws degree during the spring convocation in June 2000. During his address, he urged graduates to embrace lifelong learning and accept the expanding and changing dynamics of their careers—including influences from the social and physical sciences, humanities and performing arts.

"The university taught you how to learn, how to educate yourself—perhaps its greatest gift," said Hyndman. "To handle these inevitable career variations you will use the skills learned here of synthesizing, objectively researching and knowing the right questions to ask."

"Welcome these career changes. Invite them. They ensure a constant lifetime of renewal that is as energizing as it is fun." ■

Bursary pays tribute to a U of A champion

Lou Hyndman was deeply committed to helping students and continued to champion their success beyond his tenure as chancellor. As a tribute to his impact on the university, in 1999 the University of Alberta Senate endowed the Chancellor-Emeritus Lou Hyndman Service Bursary. This award recognizes a graduate student who has contributed to improving the quality of life on campus through exemplary service in student government, student organizations, student services, community service or volunteer activities. Since 2000, 23 bursaries totalling \$11,500 have been granted. Hyndman was extremely proud of this bursary, and both he and Mrs. Hyndman always enjoyed learning about the students who received the award. The Hyndman family has requested that donations in his memory be made to the Chancellor-Emeritus Lou Hyndman Service Bursary.

Folio Staff

On Nov. 20, the Board of Governors gave its approval for the early return of Carl Amrhein to resume his role as provost and vice-president (academic) starting Feb. 1, 2014.

Amrhein has agreed to return early from his leave as visiting executive for the Conference Board of Canada in order to assist as senior administration enters a critical stage in the university's budget planning for 2014-2015. Originally, Amrhein's stay with Conference Board was to last until July 1, 2014, but given that next year's budget will be under his management, Amrhein's involvement in its final development will ensure that he is able to move it forward as effectively as possible.

Martin Ferguson-Pell will continue to serve as acting provost until February, at which time he begins a new role as senior advisor to the president, where he will continue to provide leadership on a number of strategic initiatives currently under his purview.

"When Martin agreed to take up the responsibilities of provost, none of us knew the complications that lay ahead," said President Indira Samarasekera. "He has guided the academy through a very difficult time and his efforts have made a tremendous difference."

Since the provincial government's Campus Alberta budget reductions were announced March 7, Ferguson-Pell has worked closely with the university's senior leadership team, developing strategies for handling major budget challenges.

"He has been in constant contact with the Ministry of Enterprise and Advanced Education to advocate on our behalf and help them more fully understand those and other challenges," said Samarasekera. "Martin has been instrumental in developing a number of key proposals for government that, in part, lie behind the government's reinvestment of \$50 million in Alberta's post-secondary sector."

Ferguson-Pell has also been the major driver behind the review of graduate student education and experience and will continue to move this important initiative forward. He led several decanal and vice-provost searches, including bringing on board the U of A's new registrar, Lisa Collins, and chief librarian, Gerald Beasley.

In addition to the graduate education file, Ferguson-Pell's new role will include responsibility for shaping the academic programming of the Peter Lougheed Leadership Initiative, advancing digital learning technologies and pedagogies, developing a responsibility-based budgeting model, and assisting deans in setting and achieving advancement goals.

Ferguson-Pell will also help plan for the allocation of the \$14.4 million government boost to the 2013-2014 budget, ideas and models for revenue generation that could impact the 2014-2015 budget, initial responses to the Renaissance Committee Report and the Board of Governors' change agenda. ■

Fuzzy logic engineer brings certainty to an uncertain industry

Yuri Wuensch

Aminah Robinson Fayek has spent much of her career developing fuzzy logic as a tool for civil engineering and the construction industry. As a recent recipient of a Killam Annual Professorship, she says the award helps further bring fuzzy logic's ongoing potential into focus.

Though fuzzy logic has grown in recognition, acceptance and application, its path wasn't always clear—particularly for an industry that so depends on exactitude.

"You can imagine how well the term 'fuzzy logic' goes over with construction personnel when you tell them it will improve their decision-making," Fayek says. "First, they tell you there is nothing warm and fuzzy about construction. Then they tell you their decision making is not fuzzy at all."

A field of study for almost 100 years, fuzzy logic is a technique to capture and translate uncertainties into mathematical terms and then apply them to solve complex problems. However, it's only within the last 25 years that Fayek and other researchers began pioneering work to explore its application in construction.



Aminah Robinson Fayek

Killam

Despite construction's demand for precise engineering, she says, construction sites and their work-related outcomes often become less certain because of the human element.

"That's part of the reason fuzzy logic is so ideally suited to the construction industry," she explains.

Through collaboration, Fayek and her industry partners have helped improve labour productivity and skills evaluation while also reducing uncertainty and risk on projects. There's even a commercial application of her research team's work in fuzzy logic for evaluating

construction contractors' qualifications. The goal of her work is to help improve the competitiveness of the national construction industry, which is a significant contributor to the Canadian economy.

It's a message she has readily shared as the NSERC Industrial Research Chair in Strategic Construction Modeling and Delivery.

"Through the IRC, I have the opportunity to work with a number of diverse construction organizations including owners, contractors, associations and labour organizations," Fayek says. "Despite their varied interests, sometimes even as competitors, they have come together in a collaborative setting where we're able to carry out truly innovative research."

Despite its construction-related success to date, Fayek says, fuzzy logic isn't an end unto itself.

Instead, she says the next round of breakthroughs will be achieved by combining it with other techniques and ensuring the hybrid approaches are easily replicated and adapted. Happily, industry is catching on.

"Some of our industry partners have actually asked us if they can borrow textbooks about fuzzy logic," Fayek says. "Industry is

obviously interested in hands-on research, but it's definitely satisfying when they also want to understand the underlying theory. Overall, it's great to have our work recognized."

Winning the Killam Professorship is another degree of recognition.

"It is an honour to receive a Killam Annual Professorship," says Fayek. "Receiving the award would not have been possible without the support of the Killam Trustees, the University of Alberta, my

industrial partners, my colleagues, my graduate students, my post-doctoral fellows and my family."

Acknowledging the Izaak Walton and Dorothy Killam bequest, the Killam Annual Professorships are granted to faculty members based on the quality of their scholarly activities such as teaching, research, publications, creative activities, presented papers and supervision of graduate students. ■

University mourns passing of a ALES faculty builder

Theresa Shea

The University of Alberta community, as well as human ecologists and nutritionists, both past and present, were deeply saddened to learn of the passing of Elizabeth Empey on Nov. 22. She was 95.

Empey, a former dean of the Faculty of Home Economics, completed her Normal School Education in Edmonton in 1937 and received a teaching certificate in 1940. Following her BSc in Household Economics from the U of A in 1943, she completed her Dietetic Internship in Commercial Dietetics at the T. Eaton Company in Toronto in 1944. Returning to the U of A, she then became the dietitian in charge of providing meals to students in the three university residences: Pembina (for women), Athabasca, and Assiniboine (for men).

However, her desire to pursue further education soon led her to Cornell University in New York, where she completed both her Master of Nutritional Science and PhD in Nutrition in 1956 and 1959 respectively. Back at the U of A in 1959, Empey was appointed director of the School of Household Economics. In 1976, when the school became the Faculty of Home Economics, Empey served as the faculty's first dean.

One of Empey's major legacies was to expand the school's degree offerings. In 1960, Household Economics was a three-year program. As the school's director, Empey put forth new recommendations and received approval to offer three four-year programs: one in Food and Nutrition, one in Clothing and Textiles and one in Family Studies. The introduction of these programs meant that many new academic and non-academic staff members were hired; it also substantially increased student enrollment. Because of this newfound growth, Empey spearheaded the proposal for a larger, more modern facility, and in 1965 the new Household Economics building was opened.

Empey's leadership as both director and dean was stellar, but with each success, she reached farther. For instance, the introduction of graduate programs also began during Empey's term as dean. When she began in 1960, there were approximately 67 students and four faculty members in the School of Household Economics. By the end of her deanship in 1976, Home Economics was a faculty with 374 undergraduates, 23 graduate students and 24 full time staff members.

Empey, a wonderful mentor to many, especially young leaders in the field of Home Economics, routinely encouraged PhD completion and inspired faculty with a master's degree to work on doctoral degrees.

Over the course of her career, Empey received many awards. An elected member of the Honorary Society of Phi Kappa Pi, a recipient of the Queen's Silver Jubilee Medal and of the Award for Outstanding Achievement in Dietetics, her service to the profession and community locally, nationally and internationally was extensive.

Although she retired in 1978 and subsequently moved to Victoria, she retained strong ties to the U of A, and she enjoyed full membership in the Alberta Home Economics Association, and in 2010 was awarded the organization's lifetime achievement award. In 1988, to honour her many contributions to the profession of Home Economics and Nutrition, the Faculty of Home Economics founded the Empey Lecture (now in its 25th year), an annual public talk delivered on a topic related to Family Studies, Clothing and Textiles, or Nutrition.

Known as "Beth" by her close friends and colleagues, Empey was a fun-loving and warm person who cared deeply for others. She was known on many occasions to show her thoughtfulness to staff, sometimes by showing up at the door of new faculty members bearing welcoming gifts. An accomplished pianist, she hosted many social gatherings for academic staff at her Windsor Park home and helped to foster dynamic and long-lasting relationships. ■



Elizabeth Empey

\$1.5M gift promises to enhance HVAC engineering teaching and research

Richard Cairney

Engineers specializing in heating, ventilation and air conditioning (HVAC) have an impact on every aspect of our lives, ensuring the buildings we live, work and play in are safe, comfortable and healthy. Whether at home, on a crowded subway car or in an office tower, HVAC systems affect the quality of the air we breathe, help keep us comfortable and keep us safe in emergencies like fires or gas leaks.

To help educate the next generation of HVAC engineers and advance research in this field, Calgary-based Engineered Air has made a generous donation to the University of Alberta's Faculty of Engineering.

The \$1.5-million gift will establish the Engineered Air Chair in HVAC Engineering and the Engineered Air Fellow in HVAC Engineering.

"Not that many engineering schools teach HVAC engineering," Engineered Air president David Taylor said during a special event held Nov. 27 to announce the chair. "A lot of people don't learn about HVAC until they enter the profession, and we hope that this gives engineering students a head start, that it will raise awareness of our industry and encourage other companies to do the same."

Dean of Engineering David Lynch said Taylor's words rang true as the Faculty of Engineering began searching worldwide for an individual with the right blend of academic and industrial experience to be appointed to the Engineered Air Chair in HVAC Engineering.

"It almost seemed that we were looking for something that didn't exist," Lynch told the crowd of about 80 people gathered for the announcement. "It was something that appeared to have disappeared from the engineering ecosystem, and we realized that this position is even more important than we first realized."

HVAC engineering, he added, is at the heart of mechanical engineering. "It's about great engineering design, execution, equipment and facilities, and we take it for granted. In a country like Canada, if you don't have effective HVAC in your home, you just won't survive very long. The minute it stops working, you know it."

U of A President Indira Samarasekera praised the partnership, saying that it brings Taylor's family full

circle: Engineered Air founder and CEO Don Taylor earned his undergraduate and master's degrees in civil engineering at the U of A.

"When industry and universities work together, students can more clearly see the connection between their classroom lessons and the practical applications of engineering principles."

David Lynch

"This connects us all to your time here at the University of Alberta and is going to benefit generations of engineers," she said of the gift.

"This collaborative partnership highlights an important field of engineering and enhances the outstanding education that we provide to the next generation of engineers," Lynch added. "When industry and universities work together, students can more clearly see the connection between their classroom lessons and the practical applications of engineering principles."

The position of Engineered Air Fellow in HVAC Engineering was awarded to Robert Prybysh, a founding principal and chief engineer for Arrow Engineering Inc., an integrated buildings engineering firm.

Prybysh is investigating the efficiencies of an innovative combined system for potable water, heating and cooling. These systems are in use in Alberta and cost less to install and maintain than systems typically in use. In his U of A lab, Prybysh is constructing a working model of the system to collect data on its efficiency.

"It seems like a no-brainer to use these systems, but there's no hard data on them yet," said Prybysh, who earned his degree in mechanical engineering at the U of A in 1999 and is now working toward his PhD with the Department of Civil and Environmental Engineering's construction engineering research group. "I'll be able to generate the data engineers need to see so that they can consider these systems as options in their designs." The holder of the Engineered Air Chair in HVAC Engineering will be named at a future date. ■

U of A faculty top the list of Edmonton's Top 40 Under 40

Folio Staff

Analytical chemistry professor Michael Serpe made *Avenue Edmonton's* annual Top 40 Under 40 list for his research into responsive polymers that he thinks have the potential to improve lives around the world. Funding agencies agree.

In 2012, Serpe was awarded a \$100,000 Grand Challenges Canada competition grant to work with colleagues in Nigeria and Pakistan to develop a cheap tool that allows doctors to better test for multiple biomarkers—molecules that indicate the presence of a disease.

Earlier this year, he was awarded the \$20,000 Petro-Canada Young Innovator's Award to help fund an undergrad and grad-student rich lab group that studies a range of uses of polymers, from water decontamination to health care.

"I like to think about universal problems and believe the breakthroughs we've made in refining the delicate chemical composition of our polymers is allowing us to address so many problems using low-cost sensors—and this is a game changer," he said.

Imagine going through life breathing through a straw, unable to catch a breath, lacking the physical capacity for all but the most basic exercises.

That's how many people describe living with chronic obstructive pulmonary disease (COPD)—a debilitating condition that's the

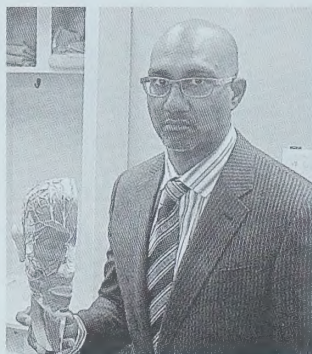
fourth leading cause of death among Canadians. There is no cure, but researchers are making headway in developing treatments that help patients live and breathe more comfortably.

"The Canadian Physical Activity Guidelines say you should take 10,000 steps each day; our patients get about 2,500 steps per day, and some get less than that," says Michael Stickland, an associate professor in the Faculty of Medicine & Dentistry and director of the Centre for Lung Health in Edmonton.

A member of the U of A's Pulmonary Research Group, Stickland is working on ways to improve a COPD patient's tolerance for exercise through rehabilitation and by improving our understanding of cardiovascular dysfunction. Patients in rehabilitation are more active, they're out of breath less and, in turn, they have greater exercise tolerance and a healthier cardiovascular system.

"It leads back to the disease management side. If we can get these patients active and get them walking a couple times a week, that will really improve their cardiovascular condition and reduce their cardiovascular risk," says Stickland, 39, another top Edmontonian whose deep roots in the city include two degrees from the U of A.

Stickland's work at his alma mater is the kind of research that isn't confined to a solitary laboratory, but involves working with



(From left) Dhiren Naidu, Michael Serpe and Michael Stickland were all named to *Avenue Edmonton's* Top 40 Under 40 list.



patients and helping them find their stride.

"It's fun because I get to do the research and also see the effects it has on the patients," he says. "A lot of the work that we're doing is not only, for example, looking at how exercise and rehabilitation improves functional status and quality of life in patients, but also helping to keep them out of hospitals."

Also making the list is Dhiren Naidu, team doctor for the Edmonton Oilers and the Edmonton Eskimos, and a concussion researcher at the U of A, where he also monitors the health of the varsity teams.

An assistant professor in the Division of Physical Medicine and Rehabilitation, Naidu founded HealthPointe Medical Centre, a multidisciplinary chronic pain clinic, in 2007.

For the past seven years, Naidu has looked at concussions in sports. In a recent study into concussions,

Naidu showed that Canadian Football League players are more likely than university-level players to value medical tests after concussions. But the professional athletes are more apt to incorrectly believe

it's OK to return to the sport within 24 to 48 hours if they have no symptoms.

"You can still be healing from a cognitive perspective even though you feel normal," he said. ■

iSMSS staffer finds place of pride

Folio Staff

Alexis Hillyard's business card might read "education co-ordinator," but that doesn't do justice to all she does for the Institute for Sexual Minority Studies and Services (iSMSS) and the U of A.

Sure, much of her job is focused on educational outreach and working with students, faculty and staff on and off campus on LGBTQ issues. But her role is always changing, from creating inclusive spaces on campus to spearheading the U of A's first-ever Pride Week and organizing Camp fYrefly and fYrefly in Schools, a peer-to-peer mentorship program that trains youth volunteers to share stories in classrooms and address issues such as homophobic language and terminology, and transphobia.

"Seeing the light bulbs go on when I'm able to facilitate a discussion or workshop, watching people engage with each other, chatting about

strategies, ideas and issues, and watching them come up with all these solutions on their own is really great," says Hillyard, 31, who was recently singled out as one of *Avenue* magazine's Top 40 Under 40 in Edmonton.

"That's when it's like, whoa, this is the right place to be."

Finding her place was a natural evolution of sorts for the U of A alumna, who landed a research assistantship at iSMSS after completing a master's degree in social justice and global education. Since coming on full-time, she has



Alexis Hillyard, a Top 40 Under 40.

assumed a role that constantly evolves with an eye to raising visibility and awareness of LGBTQ issues.

The U of A took a large step forward in that regard last spring when the institution held Pride Week, featuring some 30 events over 10 days. For many, its mere existence was a powerful symbol.

Hillyard recalls being approached by a staff member who, upon seeing the Pride Week banner, told her it how powerful it felt to be recognized and validated by the institution.

"It really meant something to them—something as simple as flag banners," she says. "For someone to be made to feel so comfortable by their workplace was so simple and powerful." ■

From U of A to Top 40 Under 40

More alumni who made *Avenue's* Top 40 Under 40:

Jessica Baudin-Griffin, '05 Bed
Spencer Beach, OH&S Certificate,
Faculty of Extension
Danisha Bhaloo, '07 BA(Crim)
Arman Chak, '96 BA, '09 LLB
Irfan Chaudhry, '06 BA, '09 MA
Alexis Marie Chute, '07 BFA
Sameer Dhar, student
Grant Fedoruk, '99 BSc PT
Aaryn Flynn, '96 BSc(Hons),
'00 BSc(Spec Cert)

Jennifer Flynn, '99 BCom, '99 LLB '09 MA
George Heidt, '00 BED
Richard Kirby, '99 BSc(Ag/Food Bus Mgt)
Jessica Kluthe, '09 BA
Keri Mitchell, '03 BA
Abraham Nunes, student
Ian O'Donnell, '01 BA
Adam Rozenhart, '04 BA
Rob Taruli, '98 BEd
Toscha Turner, '02 BA(Hons),
'02 BMus, '08 MA

Cleaning brings sheen to Green and Gold

Facilities and Operations Staff

Among the more significant opportunities to reduce the University of Alberta's environmental footprint and meet the goals of its sustainability plan are day-to-day janitorial services.

Ten years ago, the university demonstrated its environmental commitment by launching the green cleaning program, Cleaning for a Healthy U, which included the adoption of sustainable cleaning tools and practices designed to minimize building occupants' exposure to contaminants and pollutants.

Several years ago, the university moved to reduce the overall impact of its cleaning processes by procuring EcoLogo-recognized cleaning products. EcoLogo provides customers with third-party assurance that products and services bearing the logo meet stringent standards of environmental leadership. The products include paper goods, detergents, hand soap and garbage bags.

Another strategy undertaken by the university includes piloting a hand-towel composting program in select buildings. The goal is to reduce the overall amount of paper products sent to the landfill by diverting them to a compost facility.

University 101

Green cleaning is not limited to products; it also includes the equipment and processes staff use. The U of A, in partnership with Bee-Clean Building Maintenance and Wesclean, has complemented our efforts to minimize consumable products by leveraging equipment designed to reduce energy use. This equipment includes 40 NaceCare Henry vacuums, which consume 33 per cent less electrical energy than conventional vacuum cleaners. This is equivalent to 20 metric tonnes of carbon dioxide, or annual greenhouse gas emissions from 4.2 passenger vehicles.

The university further reduces its environmental footprint by using the Tennant ecH2O Autoscrubber, which now replaces manual mopping. (Think of these machines as the Zamboni for hallways and classrooms.) The autoscrubbers are chemical-free; they use ionized water, eliminating the need for synthetic cleaning products, and use 70 per cent less water than conventional equipment. This program helps our campus meet the standards required for a variety of green building certification programs.

"By eliminating the use of unneeded chemicals, using green cleaning products, leveraging innovative equipment and delivering leading-edge training programs, the Cleaning for a Healthy U program establishes the U of A as the clear leader in sustainable operations in post-secondary institutions and beyond," said Ray Dumouchel, associate director of buildings and grounds services. "Programs like this are why the U of A has been recognized as one of Canada's Greenest Employers since 2009, and why it has received a silver rating in the Sustainability Tracking, Assessment and Rating System from the Association for the Advancement of Sustainability in Higher Education." ■



(From left) Myles Johnson, Rob Scott, Ray Dumouchel and Carolyn Smolley,

Recognition of community connectors ... it takes a village

Michael Brown

People who volunteer to make a difference aren't necessarily concerned about who is watching. But there are those who are watching, and they're in awe.

Last year, the University of Alberta filled a void in its awards showcase by introducing the Community Connections Awards, designed to recognize individuals or teams of community members, faculty, staff, students or post-doctoral fellows who embody the spirit of the university's promise to "uplift the whole people."

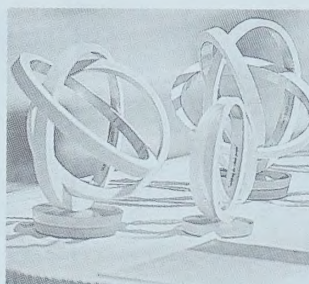
Those looking to honour colleagues who connect the university to the community at large met the

awards nomination process with a certain level of excitement.

Pediatrician Lola Baydala, who won the first ever University of Alberta Community Scholar Award, was nominated by Jill Konkin, associate dean (community engagement) in the Faculty of Medicine & Dentistry.

"I was thrilled when this award came along, and for obvious reasons, Dr. Baydala, to me, was worthy of the first of those awards," said Konkin. "The people who I think should be recognized are the ones like Dr. Baydala, who just so gets what working with people—as opposed to for people—means."

An advocate for the wellbeing of children, Baydala's dedication to



A Community Connections Awards

researching child health issues and seeking solutions at the community level has already earned her the gratitude and respect of her Aboriginal partners.

"I think the award itself is the huge thing," said Konkin. "Most people who do community connected work are, for the most part, unsung and unacknowledged, and yet we have a pillar in our Dare to Discover about engaging communities."

The inaugural Community Leader Award went to U of A physicist Sharon Morsink, who leads a team of student volunteers in coordinating the U of A's campus observatory program and is co-lead on SkyScan—a collaborative project with the Royal Astronomical Society of Canada (Edmonton Centre). Both programs exist to make astronomy more accessible to the stargazing public.

Finally, the first ever UAlberta Advocacy Award went to Renée Vaugeois, a political science alumna



Lola Baydala (left), Sharon Morsink and Renée Vaugeois attend a ceremony at City Hall May 23 to accept 2013 Community Connections Awards.

and executive director of the John Humphrey Centre for Peace and Human Rights, who has spearheaded a number of human rights initiatives in conjunction with the U of A.

Nominating Vaugeois was Gillian Edwards, head of initiatives at the U of A's Calgary Centre, who worked alongside Vaugeois at the Kule Institute for Advanced Study (KIAS) developing an event called Get Out and Stay Out, which connected the U of A and its students with the global community.

Edwards says she particularly likes the UAlberta Advocacy category because it "recognizes those who stay involved in the university after graduation and draws attention to the good work that is happening here."

And she couldn't think of a person more deserving of this award. "I was happy when Renée won," said Edwards, who attended the awards ceremony at City Hall. "It was just a nice moment to recognize and show her directly that I enjoyed working with her and respect her immensely." ■

Nominate a community connector

The Community Scholar Award recognizes an individual or team of academic staff members who not only excel in their scholarship, but also readily and frequently bring that scholarship into the community, showing how their work affects people's lives.

The Community Leader Award recognizes an individual or team of employees, post-doctoral fellows, or students who have made a valuable contribution to bridging the university's commitment to learning, discovery and citizenship with the community.

The UAlberta Advocate Award recognizes an individual or group who are not students, current faculty or staff members, but who give their time, expertise and passion to advance the U of A and post-secondary education in our community.

Nominations for the 2014 Community Connections Awards will be accepted until noon on Jan. 24. Nomination forms and full awards information can be found on the awards website. Questions about the program can be directed to darlene.bryant@ualberta.ca.

Researchers help find prostate cancer biomarker

Faculty of Medicine & Dentistry Staff

Medical researchers and their American colleagues have discovered a biomarker that accurately predicts which prostate cancer patients will have their cancer recur or spread.

Faculty of Medicine & Dentistry researcher John Lewis and his team collaborated on a study that showed an antibody specific for a biomarker called CD151^{free} was able to detect cancer cells that can escape from the primary tumour and metastasize.

The team wanted to know whether cancer spread earlier or recurred earlier in patients who tested positive for this antibody.



John Lewis

"The answer in both cases was yes," said Lewis. "If the antibody detected the biomarker in patients' tissues, their cancer recurred earlier after surgery. Patients who tested positive for the biomarker developed metastasis an average of 10 years earlier than those who tested negative."

Lead investigator Andries Zijlstra from the U.S. added, "The antibody is able to recognize a molecular change that reflects a switch in the metastatic ability of tumour cells. Therefore the detection of CD151^{free} in prostate cancer should predict whether a tumour would remain dormant or progress rapidly."

To see whether this discovery could be used as a diagnostic test in the clinic, the team looked at tissue samples from 138 patients who received prostate cancer treatment in Canada over the past 12 years.

"This translational research project really benefited from our multi-institutional, team-based approach," said Lewis, who works in the Department of Oncology as the Alberta Cancer Foundation's Frank and Carla Sojonyk Chair in Prostate Cancer Research. "The contribution of basic scientists, urologists, pathologists, trainees and clinical fellows from both institutions was essential to successfully answering our translational research questions."

Lewis and his U of A and U.S. colleagues now want to validate their findings in a larger group of patients throughout Alberta. To do this, they recently formed a provincewide translational team called the Alberta Prostate Cancer Research Initiative. If all goes well, the test could be integrated into clinical practice in two to three years.

"Ideally this test could identify a subset of patients who may be followed without treatment, and equally important, identify those who need to be treated earlier and more aggressively," said Peter Venner, an oncologist at the Cross Cancer Institute in Edmonton and a member of the research team.

"This test could improve quality of life for those with prostate cancer who don't have this marker—they could avoid invasive treatments such as surgery or radiation."

Prostate cancer is the second leading cause of cancer-related deaths in North America among men. Most prostate cancer-related deaths are due to advanced disease that has spread throughout the body.

The research that led to the discovery of this biomarker was funded by the National Institutes of Health, the Canadian Cancer Society Research Institute and the Alberta Cancer Foundation/The Motorcycle Ride for Dad.

Alberta Innovates – Health Solutions and the Alberta Cancer Foundation are funding the next stage of research, developing a simple test to detect the biomarker in the blood. ■

2014-2015 Killam Annual Professorships



Applications are now being accepted for the 2014-2015 Killam Annual Professorships. These awards recognize outstanding scholarship, teaching and community involvement. All regular, continuing, full-time academic faculty members not on leave during 2014-2015 are eligible to apply. Deans, department chairs and other senior university administrators with personnel responsibilities shall not normally be eligible for Killam Annual Professorships. Associate deans and associate department chairs are eligible providing they have no personnel responsibilities. Up to eight Killam Annual Professors will be selected by a subcommittee of the Killam Trusts Committee; no more than two Professorships shall be awarded to staff members in any one faculty in any given year. Each Killam Annual Professor shall be presented with a \$3,500 prize and a commemorative plaque. The duties of Killam Annual Professors shall not be changed from those that they regularly perform as academic staff members.

The primary selection criteria is a record of outstanding scholarship and teaching over three or more years as evidenced by any or all of research publications, creative activities, presented papers, supervision of graduate students, and courses taught. Secondary criteria is a record of substantial contributions to the community outside the university, above and beyond what is usually expected of a professor, as evidenced by community involvement normally directly linked to the applicant's university responsibilities and activities. However, other forms of community involvement will be considered, especially, but not exclusively, where the applicant's discipline does not readily lend itself to making community contributions, and also where the university's reputation is clearly enhanced by the applicant's contributions.

Awards are tenable for 12 months beginning July 1, 2014. Completed applications must be received by the Office of the Vice-President (Research), 2-51 South Academic Building, by 4:30 pm, February 14, 2014. Award recipients will be announced mid May and will be formally recognized at the Killam Luncheon in the fall of 2014.

Applications and details are available at www.research.ualberta.ca under Vice-President (Research), Internal Honours & Prizes. Questions can be directed to Annette Kujda, Administrative Officer, Office of the Vice-President (Research)—annette.kujda@ualberta.ca or 780.492.8342.

Arctic climate change taking toll on falcons

Bev Betkowski

Rain, crucial to sustaining life on Earth, is proving deadly for young peregrine falcons in Canada's Arctic.

A University of Alberta study recently published in *Oecologia* shows that an increase in the frequency of heavy rain brought on by warmer summer temperatures is posing a threat not seen in this species since before pesticides such as DDT were banned from use in Canada in 1970.

The study is among the first to directly link rainfall to survival of wild birds in Canada.

A nest-box experiment at the heart of the study, co-written by U of A researcher Alastair Franke and Alexandre Ancil of the Université du Québec, has provided "unequivocal evidence" that gradual changes in Arctic temperature and precipitation are responsible for a long-term decline in reproduction for the peregrine, a top predator in the Arctic.

The change in rainfall patterns in recent years has had a big influence on the overall decline in reproductive success over the last three decades, Franke said.

Paired with historical weather data and measures of breeding success dating back to 1980, the researchers also conducted a nest-box experiment from 2008 to 2010 in a dense population of peregrines breeding near Rankin Inlet in Nunavut on the shores of the Hudson Bay. Falcon nests

were monitored using motion-sensitive cameras, and images confirmed that more than one-third of the chick deaths recorded were indeed caused by rain, whether they were raised in nest boxes or on natural ledges.

"The nestlings died from hypothermia and in some cases from drowning in their flooded nests. Without constant parental care, they are most vulnerable to cold and wet conditions in the first three weeks of life."

Over the past 30 years, scientists have been surprised to discover an ongoing decline, even when pesticide residues were known to be too low to cause reproductive failure.

"We knew DDT was no longer an issue and based on field observations, we wondered whether changes in climate were responsible for high mortality in recent years," Franke said.

Besides deaths attributed to rainfall, the study also revealed additional fallout for chicks: starvation.

"We were surprised to find that a considerable number of nestlings raised in nest boxes later died of starvation despite having been spared from the direct effects of rain."

Believing that storms may also be the culprit in reducing the abundance of prey for peregrines, Franke has launched a food supplementation study to explore the possible link.

Grim as the study's findings are, "they have improved our understanding of the direct effects of long-term changes in weather patterns and have identified the potential importance of indirect effects," Franke said.



A mother peregrine falcon tries to brood two chicks that have died from exposure to cool, wet conditions caused by heavier rainfall in the Arctic.

The work also shows that wildlife can be sensitive to many different environmental pressures and that ongoing vigilance and monitoring is critical, he noted.

The study was funded by ArcticNet, the U of A's Canadian Circumpolar Institute, the Nunavut Wildlife Management Board and Department of Environment, the Natural Sciences and Engineering Research Council of Canada, the Fonds de recherche Nature et technologies Québec and a W. Garfield Weston Award. ■

Researchers turn to machines to identify breast cancer type

Bryan Alary

Researchers from the University of Alberta and Alberta Health Services have created a computer algorithm that successfully predicts whether estrogen is sending signals to cancer cells to grow into tumours in the breast. By finding this hormone receptor, known as estrogen receptor positive, physicians can prescribe anti-estrogen drug therapies, improving patient outcomes.

Since each cell in the body contains 23,000 genes, identifying the specific genes involved in cancer growth is an exceedingly complex task. Researchers used a form of artificial intelligence called machine learning to identify three genes that allowed them to determine whether a tumour was fed by estrogen.

"People can't possibly sort through all this information and find the important patterns," said senior author Russ Greiner, a professor in the Department of Computing Science and investigator with the Alberta Innovates Centre for Machine Learning. "Machines have other limitations, but what they can do is go through



John Mackey (left) and Russ Greiner

high-dimensional data. With our techniques, we can find combinations of biomarkers that can predict important properties of specific breast cancers."

Greiner's team created an algorithm that proved 93 per cent accurate in predicting the estrogen receptor status of tumours. To do this, they relied on data gathered from 176 frozen tumour samples stored at the Canadian Breast Cancer Foundation Tumor Bank at the Cross Cancer Institute in Edmonton.

The same algorithm was later tested on other data sets available online, with similar success. The results were cross-checked

with existing tests done by pathologists using traditional estrogen-receptor testing.

"Essentially, we've identified something inexpensive and simple that could replace receptor testing done in a clinical lab," said co-author John Mackey, director of the Cross Cancer Institute Clinical Trials Unit, Alberta Health Services. "This is a new way of sifting through thousands of signals and pulling out the wheat from the chaff. In principle, this could be applied to other biomarkers and distil data down into something that a clinician can use."

Mackey, who is also a professor of medical oncology with the Faculty of Medicine & Dentistry, said the technique is poised to take advantage of new gene-sequencing technologies, or genomics, which aims to understand the inner workings of cancer cells with a goal of tailoring treatments for individual patients.

It's still premature to consider the algorithm as a replacement for traditional lab tests, but that could change as new technologies become more affordable, perhaps in five to eight years.

"We're not there yet, but at some point it's going to be cheaper to take a tumour and put it into the machine and get these thousands of signals about its biology than it is to do the increasing number of required tests using traditional techniques in a lab," Mackey said. "When those two lines intersect, we're going to switch

to using the new technologies, and we will need algorithms like this to make sense of the data."

The research team also included Meysam Bastani, Larissa Vos, Nasimeh Asgarian, Jean Deschenes and Kathryn Graham. Their findings were published Dec. 2 in the peer-reviewed journal *PLOS ONE*. ■

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Discovery could shepherd in new ice age of particle physics

Folio Staff

Scientists using a particle detector made of ice at the South Pole have found the first indication of high-energy neutrinos that originate outside of the solar system.

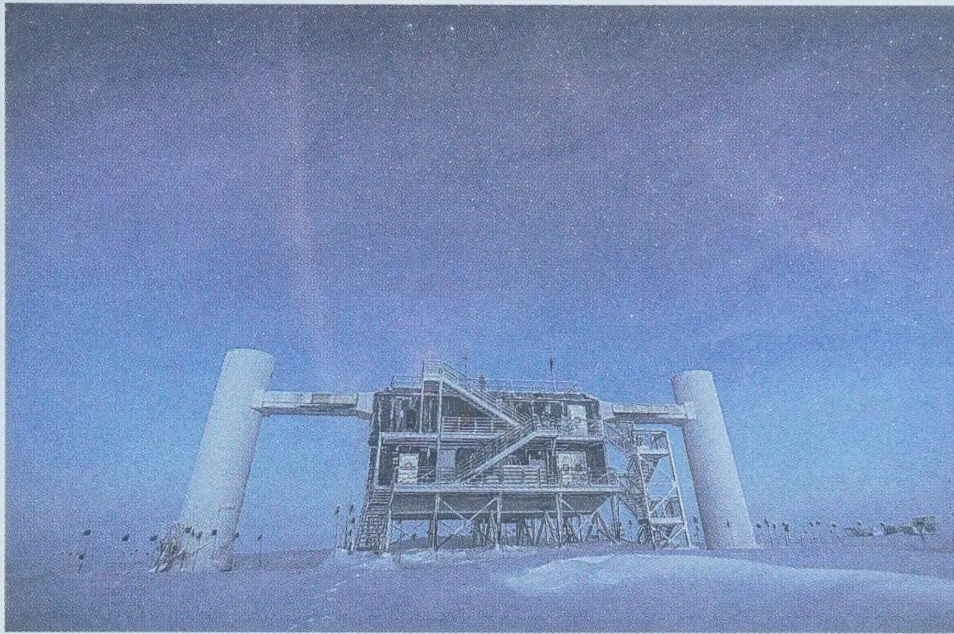
"This is a huge result. It could mark the beginning of neutrino astronomy," said Darren Grant, assistant professor of physics at the University of Alberta, who leads the IceCube Collaboration effort in Canada. The collaboration is led by the University of Wisconsin-Madison and involves 250 physicists and engineers from the United States, Germany, Sweden, Belgium, Switzerland, Japan, New Zealand, Australia, the U.K. and Canada.

Neutrino researchers have been looking to the sky for decades to learn more about the elusive particles.

Until now, scientists have seen low-energy neutrinos that originate in Earth's atmosphere, within the solar system and from one rare nearby supernova, known as 1987A.

The neutrinos observed by IceCube are different. "They are at a significantly higher energy level than those produced by the previously measured sources," Grant said, adding this could mean scientists will have found high-energy neutrinos from yet-to-be confirmed cosmic sources.

Sensors embedded deep in IceCube—a particle detector made from one cubic kilometre of ice



The IceCube Laboratory, a particle detector made from one cubic kilometre of ice in Antarctica, has confirmed the existence of extraterrestrial neutrinos.

in Antarctica—were designed to detect extraterrestrial neutrinos. From there, researchers relied on access to the Jasper computer cluster located at the U of A, managed by the WestGrid consortium as part of Compute Canada's national platform of advanced research computing infrastructure. The computational studies to analyze the data often consumed 1,000 CPUs (central processing units) in one day, with a peak use of 1,900

CPUs. In total, the project amassed more than 600,000 CPU hours on WestGrid's cluster.

"We wouldn't have been able to perform these studies without the WestGrid cluster in the time we did it," said Claudio Kopper, one of the Madison post-doctoral fellows who developed the analysis. "When I started, getting over 1,000 cores in parallel on Jasper was not uncommon. Having a fast turnaround time with many

available cores turned out to be extremely valuable."

"This is an exciting milestone in neutrino research and we're pleased that Jasper, one of WestGrid's most powerful computing clusters, could support the work that led to this discovery," said Lindsay Sill, interim executive director of WestGrid. "This is an excellent example of how access to high-performance computing resources enables scientists to tackle data-intensive research

questions and push the boundaries of what we thought was possible."

U of A graduate students helped to prepare this set of data for analysis.

"Tania Wood and Sarah Nowicki are working on the calibrations for the detector to better understand how the light produced in the neutrino interactions travels through the glacier," said Grant.

Wood and Nowicki are also doing work that will have more central significance to upcoming observations being made at lower energy levels. Three U of A undergraduate students who assisted in the IceCube detector calibrations and data handling are also co-authors of the paper: Stephanie Bohachuk, Chris Sheramata and Dylan Grandmont.

Grant was recently named co-leader of a potential major upgrade to the IceCube detector called PINGU (Precision IceCube Next Generation Upgrade).

"We are still learning about the neutrino as one of nature's fundamental particles," said Grant. "It was only 15 years ago that we discovered neutrinos have a small mass, but we have yet to learn which neutrino is heaviest, what we call the hierarchy. This is what we are designing PINGU to provide: a first definitive measurement." Details of the research were published Nov. 21 in the peer-reviewed journal *Science*. ■

U of A research team helps identify an interstellar particle accelerator

Jamie Hanlon

Newly released research in *Nature Communications* from the University of Alberta has identified the existence of a giant cosmic accelerator above the Earth.

By analyzing data from NASA's Van Allen probes, U of A physicist Ian Mann, together with his colleagues at NASA and other institutes, have been able to measure and identify the "smoking gun" of a planetary scale process that accelerates particles to speeds close to the speed of light within the Van Allen radiation belt.

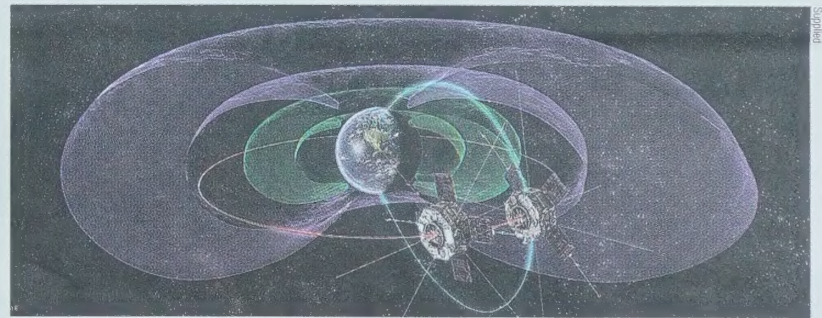
This natural space "synchrotron accelerator" has scales of hundreds of thousands of kilometers, dwarfing even the largest man-made similar accelerators such as the Large Hadron Collider at CERN, which has a circumference of only 27 kilometres.

Mann says this particle acceleration—deriving energy from solar flares or eruptions

and carried through space on a solar wind—exists in the region of space dominated by the Earth's magnetic field, where satellites fly, known as the magnetosphere. The discovery is a jumping-off point for understanding space storms and determining how to protect man-made systems—on Earth and in space—from potential damage from space storms and severe space weather.

"The puzzle ever since their discovery has been how do the particles get accelerated up to nearly the speed of light?" said Mann.

Mann says this highly relativistic particle acceleration, which can damage satellites and pose a risk to astronauts during space weather storms, is akin to the relationship between a surfer and a wave, in that the particles repeatedly catch a "ride" on a wave that sends them rocketing around the planet. As they circle the Earth, the particles may be picked up again by the same wave, which will boost its speed even further. The result is a perpetual cycle wherein the particles "get repeatedly



This is an artist's rendering of the natural space synchrotron accelerator that exists in the Earth's magnetosphere.

accelerated by waves that are coherent on truly planetary scales spanning hundreds of thousands of kilometers," Mann said.

And like climatic weather storms, space storms can be anywhere from mild to powerful. Mann says these solar storms can have variety of effects on technological infrastructure on Earth, from mild disruption of satellite communications to widespread damage of telegraph systems, as occurred during the Carrington solar storm of 1859, manifested on Earth as bright Aurorae seen across the globe.

"There's eyewitness accounts published in newspapers of telegraph wires setting on fire as a result of the electrical currents that were driven into ground infrastructure due to these space weather storms," said Mann, adding that the potential damage from a similar-sized space storm in today's highly technological world has been forecast to cost trillions of dollars in loss and repair.

Mann says understanding the physics of space weather is still in the discovery phase, but with results such as this, researchers are moving closer to producing more accurate space weather forecasts.

"We're still trying to piece together what a really big space storm would look like, and

the impact that it might have on infrastructure such as operating satellites and ground power networks—and ultimately trying to improve some of our protection of those systems against severe space weather," said Mann. "With this discovery, we're starting to put the pieces together to understand how this radiation might be created and, therefore, understand how extreme the response to severe space storms might be." ■

Are You a Winner?

The winner of this week's "Are You a Winner?" contest will receive a Christmas prize pack that includes a copy of *The Tree of Story*, the conclusion of Thomas Wharton's critically acclaimed *Perilous Realm* trilogy, as well as the gift that keeps on giving: a Butterdome butter dish. To win it, simply identify where the picture was taken and email your answer to folio@ualberta.ca by noon on Monday, Dec. 16, and you will be entered into the draw.



Katherine Thompson

"We're still trying to piece together what a really big space storm would look like, and the impact that it might have on infrastructure such as operating satellites and ground power networks—and ultimately trying to improve some of our protection of those systems against severe space weather."

Ian Mann

Campus community invited to Share the Cheer

Hallie Brodie

On a frigid December evening two students ventured to the grocery store to pick up a few items for dinner. The night air was cold and the promise of warming themselves with a home cooked meal was pushing them to complete their walk down the street. As they finally made their way to the door of the supermarket they found the doors to be locked, the lights to be off and the space void of any people; this was the first taste of Canadian Christmas for third-year international students Minji Pyo and Danbi Han.

"Nobody warned us that the store would be closed," Han explained. "We were like, 'oh my God, it's closed!'"

The girls, originally from Korea, had expected that learning about Canadian culture would be a perk of their U of A experience, but had hoped for a gentler introduction to North American traditions.

Thankfully, University of Alberta International's hunger to provide students like Pyo and Han with a warmer exposure to the customs of the local community,

which has resulted in the creation of the new program Share the Cheer: Host for the Holidays.

"Sharing that simple tradition that we perform every year without second thought will be something that these students will carry with them forever, as a part of their U of A experience."

Kyla Amrhein

Launched just in time for the 2012 holiday season, the inaugural edition of Share the Cheer invited the U of A's staff and faculty members to share their winter break festivities with the many international students who spend their time on campus between the Fall and Winter semesters. Lynn McPherson, an archivist with the Bruce Peel Special Collections Library, was one of the 30 staff members who participated in the program and was excited to welcome two U of A students

from China into her home. She was so excited to host a multicultural holiday exchange that she invited a third Taiwanese student completing his masters through Athabasca University.

"It was a lot of fun, and I know we all enjoyed the experience a great deal. I had an e-mail from the girls on Boxing Day thanking us for the 'best Christmas' they had ever had, which was kind of cute, because I think, as they are Buddhist, it is probably the only Christmas they have celebrated."

In total, only 80 students were able to participate in evenings like the McPherson's, although more than 200 had applied. Given the student demand, and the success of last year's participants, this year's program is expanding to include alumni.

Kyla Amrhein, the Alumni Relations volunteer coordinator, explains that because the alumni volunteer program has grown exponentially over the past year "we have more and more alumni who are looking to give back to campus in meaningful ways, and we believe that Share the Cheer is a perfect opportunity to offer grads who are looking to really connect with our international



Last Christmas, University Relations associate vice-president Deb Hammacher and her husband Tom Luttrell (far left) opened up their home to Khashayar Ebrahimi from Iran (second from left) and Huy Nguyen from Vietnam.

students and share our Canadian holiday traditions. We are really excited to open up the invitation to our alumni this year."

Connecting communities is one of the cornerstones of the U of A, and programs like Share the Cheer represent just one way that the university helps to foster the cultural exchange that individuals like Pyo, Han and McPherson have sought. Although sharing meal might seem like a simple, solitary act, Amrhein has summed up the true reach of the program by pointing out that for

many cultures, the idea of carving a turkey will be brand new. "Sharing that simple tradition that we perform every year without second thought will be something that these students will carry with them forever, as a part of their U of A experience."

Share the Cheer 2013 will be running from Dec. 21 to Jan. 1. The U of A will be accepting applications for hosts and student participants until Dec. 18. To learn more about the program, check out the Share the Cheer: Host for the Holidays website. ■

Helping immigrants join multicultural conversation

Jamie Hanlon

Years after they arrive, some immigrants to Canada still find it difficult to improve their oral English skills, in part because of cultural differences, according to a University of Alberta study in which two groups of immigrants, Mandarin and Slavic language speakers, were compared.

Educational psychology professor Tracey Derwing, one of the study's authors, says there are several reasons Chinese newcomers have a more difficult time than Russian and Ukrainian speakers, including cultural differences, language relatedness and the willingness of Canadian-born individuals to speak with immigrants. The findings of this study have implications for the public, the workplace, and language education programs in Canada.



Tracey Derwing

second-language learners," said Derwing. "Some people feel nervous about talking to second-language speakers because they're afraid they're not going to understand the non-native speaker, and they don't want to embarrass that person by asking them to repeat."

Derwing notes that many recent federal government policies seem to run counter to the notion that Canada is a welcoming society. For example, increasing the language requirements for federal skilled workers will not solve communication problems in the workplace caused by cultural differences. She says the government typically uses economic factors when assessing whether immigrants have successfully integrated, but focusing on economic success alone is not an accurate indicator of integration. Social, cultural and linguistic factors are also critical in determining whether newcomers will stay.

"There are really good social indicators of integration as well, and we should be paying more attention to those," said Derwing. "Do immigrants vote once they get citizenship? Do they participate in other kinds of organizations that Canadians participate in? Those are the sorts of things that are really tied to language proficiency."

Derwing suggests that employers may need to step in to support their employees' language development—a move that could ultimately benefit companies. When frequent communication among employees is necessary, workplace language training programs become crucial. Derwing notes that some companies are already hiring in-house language educators. In the meantime, she says, federal and provincial language programs should include a stronger focus on speaking skills. ■

the open door

Have a happy holiday!

Indira Samarasekera, president and vice-chancellor

As the holiday season approaches and 2013 comes to a close, I want to take this opportunity to thank the University of Alberta community for persevering through a challenging year.

It has been a year filled with difficult decisions and sacrifice, and I appreciate everyone's hard work, dedication and resilience. I know that many of you have put in extra hours and found creative solutions in order to preserve the quality of our student experience and research efforts. Whether I am chatting across campus, or in roundtable discussions, or via email, I am encouraged and moved



Indira Samarasekera

by the level of passion and engagement from our students, faculty and staff. Constructive suggestions and words of encouragement have come from all corners of campus. Such passion is inspiring and humbling.

I also want to thank our many friends, alumni and donors from across Alberta and around the world. We are honoured by their continued strong support. Whether

shown through advocacy, creative or research partnerships, or kind gifts—their belief in our mission is incredibly gratifying.

Finally, my thanks to our staff and student groups—AASUA, NASA, SU and GSA and our alumni council, senate, and board of governors, for their continued commitment, support and leadership which help sustain and strengthen the U of A.

2013 was certainly a challenging year, but I am proud of what we have all been able to accomplish. I am excited for the New Year and what it holds—and look forward to continuing to serve and represent the University of Alberta in 2014. I wish you all a restful holiday season filled with joy and celebration with your friends and family. Happy holidays to you all, and for those of you who celebrate it, Merry Christmas! ■

Move over, Thor, there's another Viking in town

Laura Ly

With moviegoers flocking to cinemas around the world to watch *Thor: The Dark World*, the popularity of the Norse thunder god has sparked a surge of interest in the Viking Age. But although much is known about men during this time, what about the women?

Natalie Van Deusen, a professor and researcher in the Department of Modern Languages & Cultural Studies at the University of Alberta, studies the depiction of women in Old Norse Literature.

Most of us think of Vikings as brutes in horned helmets who raped women and pillaged villages, but Van Deusen is quick to point out that this Viking stereotype is largely inaccurate. For starters, there is no evidence to suggest that they wore horned helmets. "In addition, being a Viking meant a lot more than just pillaging and taking land—though they did that certainly," she says. "There were Vikings who traded and farmed, and some were great poets and storytellers, but this is often overshadowed by a much more violent image."

Van Deusen notes that stories from the Viking Age were developed orally and passed down by word of mouth before being written down, sometimes not until two or three centuries after they were first told. In her Scandinavian literature and culture classes, Van Deusen discusses with her students whether the characters they're reading about are realistic depictions of people in the Viking Age, or whether it is an imagined history. "The texts we're reading are interpretations of the past and [illustrate] the biases of the people who are describing these events. So in some ways, they reflect certain agendas, and that's not very different from modern interpretations," explains Van Deusen, who was recruited to the U of A to be the inaugural Henry Cabot and Linnea Lodge Professor of Scandinavian Studies.

"Popular culture representations of the Viking Age are interpretations that are very much a product of their own time. As in medieval sources, things are added or taken out to suit the author's purpose and the interests of the audience. The type of Viking Age that popular culture depicts tells us about our society's ideals and values, as much as the Viking Age presented in medieval sources tells us about theirs. It's not at all irrelevant," she adds. The Viking Age is considered the "Golden Age" for Scandinavia, so literature and popular culture tend to focus on the Viking archetype.

Norse literature from this era, also known as the sagas, told stories about ancient Scandinavian history, early Viking voyages and the feuds between early Scandinavian families. Van Deusen primarily studies the sagas and the role of women in these texts.

Those who are hoping for real-life "shield maidens" (a pop-culture portrayal of Viking women as brave and unflappable warriors, such as Sif in the *Thor* movies) will be disappointed. However, though there is no evidence to suggest that women fought in battle, Scandinavian women did wield a great deal of power in the household. "There's this common image of the Viking woman with the keys dangling in her belt. So she's in charge of the household and everything within that," explains Van Deusen.

"Literature portrays a very opinionated woman who has a strong influence on the men in her life. She's able to compel them to do all kinds of things. For example, she's usually able to convince them to take revenge on her behalf, so the whetting woman is a common character type. Women in Scandinavia seem to have more power than their contemporaries elsewhere in Europe," says Van Deusen.

The sagas typically portrayed the lives of everyday people, differentiating it from literature in other parts of the world, which usually told stories of the elite. Van Deusen notes that this focus on "normal" people in the sagas is also reflected in



Natalie Van Deusen

the popularity of the god Thor during the time. "Norse mythology is really interesting because it isn't as far removed from humanity as other mythologies. The gods are very human. And just like today, Thor was a favourite among people living in the Viking Age. Whereas Odin was the god of the nobility, Thor was the everyday person's god; he was in charge of the weather, rain, thunder and battle. He's also one of the most fallible of gods."

Although her research looks at women from a different place and time, Van Deusen says it could provide insight into how women interact with one another today. "I've been studying, first of all, how women in the sagas interact with each other as friends. I'm interested in what the saga authors' depiction of female friendship can tell us about attitudes towards women's interpersonal relationships during this time, and how that even resonates with the way women interact with one another today."

"You see the 'frenemy' thing even in the sagas," she laughs. ■

Arts in 60 Seconds looks to serve up some bite-size conversation starters

Michael Brown

Japan's recovery in the three decades after being decimated during the Second World War is a phenomenon many economists can only describe as an economic miracle.

And while Japan's post-war triumph is an industrial marvel, economic miracles are not unique to the small island nation.

Just ask history professor Mikael Adolphson, or, if you're in a rush, watch his *Arts in 60 Seconds* video entitled Japan's First Economic Miracle, where he uses but 120 words to explain how Japan was able to monetize its economy without minting a single coin in the 12th century.

Adolphson's video is one of a dozen minute-long presentations introducing Faculty of Arts researchers and their work, just long enough to start a conversation or inspire further inquiry.

"I want to tell the viewer why my research, which is very obscure—I deal with 12th century China and Japan—is actually relevant to people today," said Adolphson. "[Showing purpose] is a challenge that we all face. We do research in an academic environment and there

are people who think what we do is not particularly relevant, but in fact if you look at what all these videos are about, these are things that are interesting to people."

The idea for the videos piggybacks on a similar campaign undertaken by Pennsylvania State University and brought to life here by Lois Harder, associate dean of research in the Faculty of Arts.

"The idea is to profile the breadth of the research we do in the Faculty of Arts in a small, tasty package," said Harder. "We want people to know that we do a whole range of different types of research in the Faculty of Arts."

Harder began working on this idea in August, when people talking to university professors usually ask, "so, you have the summers off?"

"The answer of course is 'no, we're doing research in the summer,' but what does research look like if you're not in your laboratory making things bubble away, or out in the field? said Harder. "I think hopefully these things give people a better sense of the kinds of questions we're asking, and where we go digging to find the answers."

The only caveat on each video—ranging from a talk on the human voice by Betty Moulton to

a definition of digital humanities computing by Geoffrey Rockwell—was the time limit. Beyond that, Harder simply asked the featured researcher to summarize a research topic.

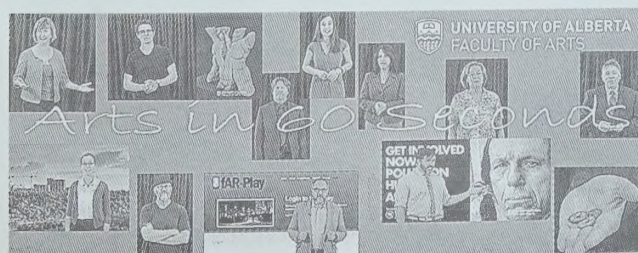
"This is an opportunity to profile your research, to think about something fascinating that catches people's attention," she said. "Each researcher took the question in a different way. With only 120 words, it's a very tricky exercise, but I think they turned out great."

To watch the videos, go to www.foa.ualberta.ca/Research/Artsin60Seconds.aspx. And stay tuned for a new batch of *Arts in 60 Seconds* in the New Year. ■

Chat of the titans



Alanis Morissette and Margaret Atwood thrilled a sold-out Winspear Centre Nov. 22 as the global icons took to the stage for the 2013 Festival of Ideas.



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news [shorts]

folio presents a sample of some of the stories that recently appeared on the [ualberta.ca news page](http://ualberta.ca/news/page). To read more, go to www.news.ualberta.ca.

Changes to lifestyle changes can prevent diabetes

People at high risk of developing diabetes can prevent its onset if they exercise, improve their diet and make one other lifestyle change such as seeking counselling or quitting smoking, according to a study performed by family medicine researcher Christina Korownyk and her team.

Korownyk reviewed data from nine clinical trials with patients who were at risk for diabetes, and 11 trials for patients who had diabetes. The lifestyle changes patients made ranged in duration from six to 72 months, with some patients being followed for as long as three to 20 years after the changes were made. The third lifestyle change patients made, other than improved diet and more exercise, included counselling, goal setting, cooking lessons, stress management, medication, or glucose and blood pressure monitoring. In this review, people considered at risk of developing diabetes included those with metabolic syndromes, impaired glucose tolerance, insulin resistance and impaired fasting glucose.

"This is reassurance for those who are at risk of developing diabetes that there is good evidence to support comprehensive lifestyle interventions in preventing diabetes," she said. "The benefits begin early on, within the first year, and lasted for years after the interventions ended."

The Agency for Healthcare Research and Quality and the Centers for Medicare & Medicaid Services funded the research.

U of A curling, Viking biathletes lead way to Italy

Five curlers and five Augustana biathletes, along with a host of Golden Bears, Pandas and Augustana coaches are headed to Trentino, Italy to be part of the 26th Winter Universiade Games Dec. 11-21.

Rob Krepps, who leads the U of A curling program out of the Saville Community Sports Centre, will serve as Canada's men's head coach, while Garry Coderre, head coach of the U of A Pandas, will be the Canadian women's head coach. Canada's men's team in Italy will be composed of Brendan Bottcher and Brad Thiessen, both of whom still curl for the Golden Bears, as well as Bears alumni Karri Martin and Mick Lizmore. Parker Konschuh, who still competes at the U of A, will be the team's alternate. This team captured the CIS championship in 2012.

And although Canada's women's team is the former two-time CIS championship team from Sir Wilfrid Laurier University, that whole rink, once graduated, moved to Edmonton to train at the Saville Community Sports Centre under the guidance of Krepps. The team will be skipped by Laura Crocker, and features Jennifer Gates, Sarah Wilkes and Cheryl Kreviazuk, along with former Manitoba Bison skip Breanne Meakin as the team's alternate.

The curling coaching contingent will be joined by Pandas hockey bench boss and seven-time national champion Howie Draper, who will take the helm of the women's hockey team, and Augustana biathlon coach Lowell Niven.

Augustana biathletes representing Canada at the Universiade include Ryan Burlingame, Nicholas Lenko, Keely MacCulloch, Elizabeth Mawdsley and Jennifer Paterson.

U of A Athletics helps usher in a new CIS landscape

Canadian Interuniversity Sport (CIS) announced two motions Dec. 3 as part of its ongoing battle to keep the best Canadian student-athletes in Canada, and U of A Athletics helped show the way.

As part of a new CIS strategic plan, the initiatives include an update to the eligibility repatriation rule to allow Canadian student-athletes playing in the NCAA to return to Canada and play for a CIS team without sitting out a full year; and a five-year women's hockey pilot project, which will allow CIS women's hockey programs the ability to offer athletic scholarships that extend beyond tuition and fees to cover room, board and books.

Both motions increase a Canadian university's ability to recruit the best Canadian student-athletes, and are part of a bigger vision to align CIS competition levels and student-athletes with Canadian national sport programs. Currently, for example, Canada's U-22 women's hockey development team roster has just one player from a CIS school.

The women's hockey pilot project takes its roots from the CIS Women's Hockey Summit organized by U of A director of Athletics Ian Reade, who brought together CIS women's hockey stakeholders during the 2012 CIS women's hockey championship tournament in Edmonton.

Following the summit, Angie Poznikoff, a former Pandas' hockey assistant coach and U of A Master of Coaching student, put together an extensive research project that helped fuel the women's hockey pilot project, which received incredible endorsement across the CIS landscape.

As a result, women's hockey programs will now be able to offer, essentially, full-ride scholarships, and assign scholarships in a much more flexible and robust fashion. All CIS teams will need to continue to remain under the scholarship cap (70 per cent of tuition expense for the 26-player roster), but will have greater freedom to offer more to the best Canadian student-athletes.

The eligibility repatriation rule, which received a 98 per cent approval from the 55 CIS member institutions, will take effect in September 2014.

Pharmacology mourns respected diabetes researcher

Folio Staff

Matthias Braun, a beloved assistant professor in pharmacology since 2011, passed away unexpectedly Nov. 16. He was 47.

Braun's research in the field of diabetes and pancreatic islet biology is well known and highly respected. His contributions have shaped the work of colleagues around the world.

Braun completed his medical training in Bonn, Germany, in 1993. Following this was a period of

in-hospital military service, during which he interned in neurology. Braun gravitated toward math, physics and engineering, but found his particular calling in biomedical research. In 2000 he completed his PhD with Frank



Matthias Braun

Thevenod, professor in the Department of Physiology at Saarland University. His dissertation, which focused on the molecular regulation of potassium conductance in zymogen granules of the exocrine pancreas, was awarded the Calogero-Pagliarello Prize for best medical thesis at Saarland University.

Later that year, Braun joined former U of A diabetes researcher Patrik Rorsman in Lund, Sweden, as a post-doctoral fellow.

"When I joined the same group in 2003, it was Matthias who volunteered to pick me up at the airport," said Patrick MacDonald, professor in the Department of Pharmacology and longtime friend. "He stopped at a market to help me buy food for my first day in Sweden—an example of the kindness that many have come to know."

At Lund, Braun established a reputation as an intelligent, rigorous and logical scientist. His work there established important mechanisms underlying autocrine and paracrine communication between pancreatic islet cells, particularly the control and function of intra-islet GABA signalling.

"Braun beat me at billiards, badminton and table tennis; he introduced me to German weissbier. My wife and I taught him to play ultimate Frisbee," remembers MacDonald.

While in Sweden, Braun held fellowships from the European Union and the Juvenile Diabetes Research Foundation, and was awarded the Research Prize for Young Scientists from Lund University.

In 2005, several members of the Lund group moved to Oxford, where Braun held a research associate position at the Oxford Centre for Diabetes, Endocrinology and Metabolism. This was a productive time for Braun's research, during which he developed an interest in understanding the mechanistic differences in islet function between humans and rodents. Several key publications from his work in Oxford established the basic ionic and exocytotic mechanisms of hormone release and cell-to-cell communication in human islets.

"Braun was a member of the inaugural Oxford floor hockey club. We drank British ale; he visited shortly after our son was born. It was in Oxford that I truly began to appreciate his meticulous approach to science," said MacDonald.

Braun received an Exceptional Merit Award from the University of Oxford for his work there.

He was recruited by the Department of Pharmacology at the U of A in 2011, where he had been an assistant professor and a valued member of the Alberta Diabetes Institute.

Braun obtained Canada Foundation for Innovation funding to build his lab. The commitment and progress of the undergraduate and graduate students who worked in Braun's lab are a testament to his outstanding ability as a mentor, his patience and his unique ability to mentor with a quiet confidence and strong principles.

Braun visited his family in Germany almost every summer, but this year delayed the trip to work on the Canadian Institutes of Health Research grant he submitted in September. He planned to visit instead at Christmas.

"Matthias resurrected his ultimate Frisbee career here, and he accompanied me to many Canadian football matches. He particularly enjoyed the nature here in Western Canada, making many trips to the mountains and West Coast and running in the North Saskatchewan River valley," said MacDonald. "To quote a mutual friend, Matthias was 'a gentle and brilliant man with so many hidden qualities until you got to know him.' His family, colleagues and students, and the many friends who were fortunate to discover those hidden qualities, will miss him." ■

laurels

Annalise Acorn, professor in the Faculty of Law, was appointed as Visiting Fellow at All Souls College, Oxford. Former Visiting Fellows often call election to All Souls a "crowning achievement" and have noted the intense competition for the handful of Fellowships offered to visiting scholars each year. Acorn's main area of research interest is the theory of the emotions in the context of conflict and justice.

Ardelle Ries, professor of Music at the University of Alberta Augustana Faculty, has been awarded the Alberta Choral Federation Richard S. Eaton Award of Distinction in recognition of her outstanding contribution to choral music in Alberta. Presented annually, the award recognizes exemplary service to choral music in the province of Alberta.

Visual communication design professors emeriti **Peter Bartl**, **Jorge Frascara** and the late **Walter Jungkind** received the Team Icoagrada Achievement Award for their significant work, during the local, national and international levels, as educators and design academics during the 50th General Assembly of Icoagrada (International Council of Communication Design Associations) in Montreal in November.

Together these three individuals, as a team, established and developed a world-class design division and provided a world-class design education to generations of designers who now hold influential positions in various design fields across Canada and internationally.

Jungkind established the visual communication design program at the U of A, where he hired both Bartl and Frascara to work with him. Years later, Frascara spearheaded the groundbreaking and now internationally recognized bachelor of design route program. The U of A's master of design program was one of the first of its kind in North America.

The Icoagrada Achievement Award is the highest recognition granted to designers by Icoagrada for their contributions to the profession. Icoagrada is the world body for professional communication design.

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Co-op student experiences ups and downs of space research

Richard Cairney

A year ago, University of Alberta engineering student Brandon Kwong realized that doors don't open for you unless you knock. Since then, Kwong's door-knocking has led him to a paid co-op placement working on a top-secret space technology project in Germany, and a seat on a parabolic flight to monitor a Faculty of Engineering professor's experiment in a low-gravity environment.

Kwong, a co-op student in his final year of the mechanical engineering (biomedical) program, always hoped to do one of his co-op placements abroad. Trying to gain international education experience first, he entered a U of A student competition to take part in the Canada-Norway Sounding Rocket (CaNoRock) program and wound up working with a group of students and rocket scientists at the Andoya Rocket Range in Norway.

That experience, he says, led directly to his most recent engineering co-op placement, with Astrium GmbH, part of a larger company comprising Airbus, Eurocopter, Astrium and Cassidian.

"After CaNoRock I got more serious about working abroad, and confident that I could," he said. "Then I discovered the coolest job placement ever, at Astrium in Germany, and the CaNoRock experience made me more qualified for the position."

Kwong is working in Friedrichshafen, Germany, in the company's space transportation department. He's part of a team working on an electromagnetic levitator that will be flown to the International Space Station next year.

The levitator device allows researchers to study materials directly, as opposed to viewing them through containers. Having a containerless environment in microgravity allows researchers

to understand properties of materials they would not otherwise be able to discern.

Other than that, there isn't much Kwong is permitted to say about the work he has been doing during his eight-month placement, which he describes as "top secret."

But his time in Europe included an interesting twist. Materials engineering professor Hani Henein, who helped arrange Kwong's co-op placement at Astrium, asked Kwong to travel to France to supervise an experiment designed by one of his post-doctoral students. The experiment was conducted on a jet during a parabolic flight, which simulates microgravity environments by flying in a series of up-and-down trajectories.

"Dr. Henein's research group runs experiments in these parabolic flight campaigns using electromagnetic levitation to study material properties, just like what I do at Astrium. He sent me as a primary investigator, to oversee the experiments his post-doc had prepared at the German space agency in Cologne," said Kwong. "He said it would benefit him in the sense that he's training up the next generation of space researchers, and that it will be good for Canada and his research group for me to be on that flight. I think he was being very generous."

"It's an important part of my job, the mentoring and seeing students grow," said Henein, who has already helped arrange for a second engineering student to take on a placement at Astrium early in the new year.

The parabolic flight Kwong was on included 31 periods of weightlessness lasting about 20 seconds each.

"It all happens incredibly fast. You're only allowed to free-float in a designated area, and only three people are allowed in at a time. Everywhere else important research is being done."

Kwong says the past couple of years have been transformative.



Brandon Kwong's co-op placement in Germany included an opportunity to supervise a U of A experiment in simulated low gravity.

"At one point I thought that building a rocket in Norway would be the coolest thing I would ever do, but that led me to working for a space company in Germany, even cooler, and then to a parabolic flight! Every little thing I do can help progress my career and move me towards bigger and better things. Something far off in the future that may seem impossible now can happen if you just start taking steps in the right direction and grabbing every chance you can," he said.

"I won't shy away from a great opportunity again; I might even have some confidence that I'll be able to do it. And I never ever could have planned out this career path, so I know I can't plan the rest. I've always thought that I would need to have my career plan all figured out by around this point in my life. Well I don't, and I don't really want to. I know that as long as I set myself up with a good chance to succeed, and keep an open mind, I'll be happy to just see where that takes me." ■

Student ingenuity shines at 3rd annual undergraduate research showcase

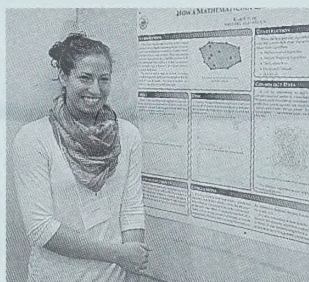
Jamie Hanlon

Where can you go to learn about public attitudes on smoke-free playgrounds, cooking activities in the ancient Greek city of Kastro Kallithea, regulation of hate speech in Alberta and intelligent control of prosthetic limbs—all in one place?

On Nov. 22, that place was the University of Alberta's third annual Undergraduate Research Symposium, where 130 undergraduate presenters from nearly every faculty on campus put their burning interests and passions to public scrutiny.

The stars were out for math student Kari Eifler, whose summer job was developing an algorithm and poring over cosmology data from the physics department. She says her love of math and her desire to devote her life to that field was a motivating factor for getting involved in research, but the presentation was also meant to help motivate others.

"I really wanted to show everybody that you can do research as an undergrad in math," said Eifler. "Most people think that math is something really hard, that you can't do it until you have a PhD. I wanted to show that you can."



Math student Kari Eifler with her poster presentation at the Undergraduate Research Symposium Nov. 22.

Among the presenters were the Map Men, an interdisciplinary team from the U of A whose presentation was named best in North America at the 2013 International Genetically Engineered Machine competition. Led by biochemistry professor Mike Ellison and chemical and materials engineering professor Dominic Sauvageau, the team

created a biological computer, using bacterial cultures to solve the Travelling Salesman Problem, a classic conundrum that involves finding the shortest possible route through a network of cities.

Engineering undergrad Albert Hong presented about his research into solving a puzzle of a different nature—developing a bandage that can stretch over human joints and stay fastened. Hong, whose interest in research and discovery led him to apply to one of his professors for guidance, offers simple advice for other would-be inventors. "Try and find an issue that really, really speaks to you and try and formulate a plan on how you can fix it," he said, adding that finding the right match for a co-operating professor is equally important.

This year's symposium is not only for the students, says Connie Varnhagen, academic director

of the U of A's Undergraduate Research Initiative. Varnhagen cites feedback from one of the judges, who was so impressed by a student researcher's poster presentation that the judge offered to connect the student with another group she may be interested in working with. "It's the community of research and advancement of knowledge," said Varnhagen.

Varnhagen notes that the competition to be part of the symposium is increasing with more applications coming in every year. She said the connections that student presenters are making with researchers and fellow students are driving the success of the event—and the futures of the participants.

"Their excitement and interest are motivating their undergraduate degrees," she said. "It's motivating their career choices and their co-curricular choices. It's fabulous." ■

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talks & events

Talks & Events listings do not accept submissions via fax, mail, email or phone. Please enter events you'd like to appear in folio and at www.news.ualberta.ca/events. A more comprehensive list of events is available online at www.events.ualberta.ca. Deadline: noon one week prior to publication. Entries will be edited for style and length.

UNTIL FEB. 7

Culinaria. The Bruce Peel Special Collections Library is displaying two beautiful Culinaria exhibitions: one physical (drawing from the Linda Miron Distad Culinaria Collection) and one online (featuring works from the Prairie provinces). They will be of interest to food lovers and book lovers alike.

UNTIL DEC. 10

Human Rights Week. This week is an opportunity to raise awareness of human rights education, equality, diversity and human rights at the university. Hosted by the Office of Safe Disclosure & Human Rights, events include Breathtaking Film Screening (Dec. 6) noon – 1:30 p.m., L1-140 ECHA; U of A's Human Rights Education Recognition Awards (Dec. 10) noon – 1:30 p.m., Timms Centre; Gall Conference 2013: The State of Economic Rights in Canada (Dec. 10) 8 a.m. – 5 p.m., Lister Hall; Keynote Speaker: Howard Sapers, correctional investigator of Canada and former MLA for Edmonton-Glenora (Dec. 10) 6–10 p.m. Timms Centre.

DEC. 8

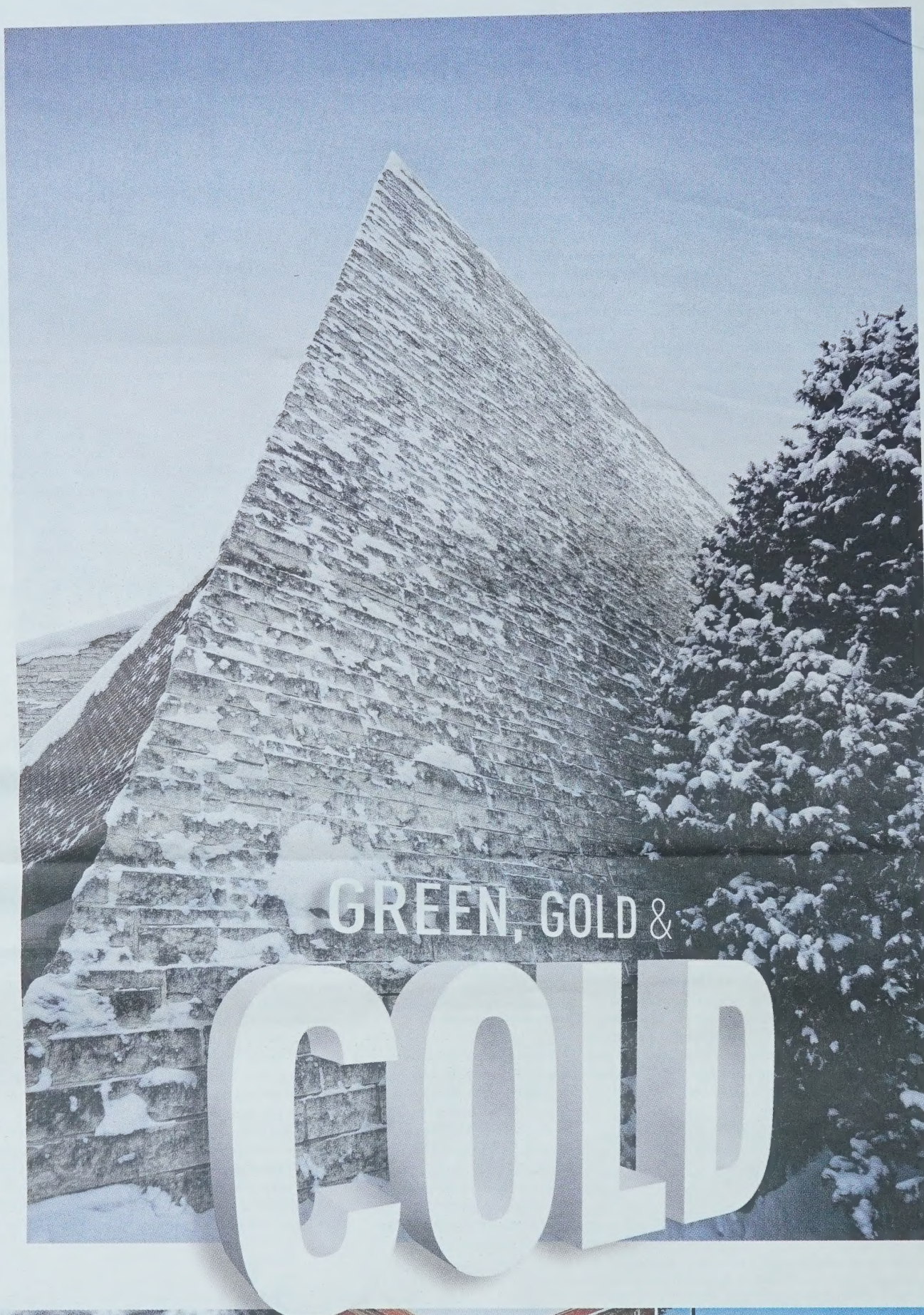
Annual Christmas Concert: Silent Night. 3–6 p.m. Convocation Hall.

DEC. 9

Climate Change and the Carbon Cycle Through an Aquatic Lens. This lecture, subtitled Northern Aquatic Ecosystems in a Changing World will be delivered by Suzanne Tank, assistant professor, Department of Geography at York University. Tank is a recruit to the CAIP (Campus Alberta Innovates Program) Chair in Aquatic Ecosystem Health, Department of Biological Sciences. During this talk, she will examine the interplay between aquatic ecosystems and global change through both of these lenses. 4–5 p.m. M145 Biological Sciences Building.

DEC. 25–JAN. 1

Christmas holiday period. University buildings closed.



Winter has descended on campus in a harsh way, bringing with it a different kind of pretty.

PHOTOS | RICHARD SIEMENS | MARKETING & COMMUNICATIONS

the
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